

Virginia

JUNE 1966

Wildlife

VOLUME XXVII / NUMBER 6

20 CENTS



Virginia Wildlife

*Dedicated to the Conservation of
Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia*

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES
Richmond, Virginia 23213



CONSERVATION COMMUNICATIONS
AWARD—1965

Presented to Virginia Wildlife by the
VIRGINIA WILDLIFE FEDERATION in cooperation
with the NATIONAL WILDLIFE FEDERATION
and the SEARS-ROEBUCK FOUNDATION



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JUNE
Volume XXVII / No. 6

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COVER: His first appearance on lawn and meadow traditionally signals the arrival of spring, and his morning song consistently announces the first peep of dawn each day. His name, "robin," is a misnomer, traceable to early colonists who fancied a resemblance in coloration and habits between this species and the European robin redbreast. Actually, our robin is a thrush. Color photo by Alvin E. Staffan.

SUBSCRIPTIONS: One year, \$1.50; three years, \$3.50. Give check or money order, made payable to the Treasurer of Virginia, to local game commission employee or send to Commission of Game and Inland Fisheries, P. O. Box 1642, Richmond, Virginia 23213.

VIRGINIA WILDLIFE is published monthly at Richmond, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to Box 1642, Richmond, Va. 23213. The editorial office gratefully receives for publication news items, articles, photographs, and sketches of good quality which deal with Virginia's soils, water, forests, and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE. Clearances must be made with photographers or artists to reproduce illustrations.

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EDITORIAL

Words and Deeds

ENOUGH words are written about water pollution every year to fill a warehouse full of wastepaper baskets, but words alone never cleaned up a polluted stream or prevented a fish kill.

All surface water contains pollutants. That is to say, no stream or impoundment consists of pure H₂O. A stream flows merrily along its way, and suddenly something tragic happens. Perhaps the load of the same old impurities that have been there all along becomes too great for the stream to assimilate. Perhaps a new, toxic substance is discharged into the water. Perhaps, under conditions of low water, warm weather, and a high level of nutrients, an explosion of microorganisms exhausts the supply of dissolved oxygen. In any event, a massive fish kill occurs, which in itself may be of grave concern only to fishermen. But the conditions that caused the fish kill are of grave concern to everyone, because water that is not fit for fish is not likely to be fit very long for drinking, bathing, boating or other forms of human use either.

Then come the words. Words, words and more words—futile sound and fury that does nothing to prevent recurrence next week, next month, or next year.

To prevent a recurrence, it is first necessary to find out exactly what happened to cause the disaster. Sometimes a natural phenomenon is to blame. More often the trouble can be traced to human carelessness or a wanton disregard for established safeguards. Armed with the facts in such a case the State Water Control Board can take steps to see that the same thing does not happen over and over again. To get those facts requires not words but action—*immediate* action. Tomorrow will be too late! Hours are important when a fish kill is going on.

The greatest single obstacle in the way of determining the cause of most fish kills is the difficulty in getting water samples and specimens of dead and dying fish taken while the kills are in progress. This is where you can get into the action. If you spot a fish kill this summer, or hear of one, don't wait for someone else to act. Collect a water sample immediately, in a clean jar. Fill the jar, so that no air remains above the water, and put on a tight-fitting top. Paste on a label, showing the date, time and place the sample was taken. Collect two, or three of the fish, picking the freshest ones which show the least signs of decomposition. If you can get live ones still gasping for air at the surface, so much the better. Then, as quickly as possible, give your fish and water samples to the nearest game warden, and describe the fish kill to him in as much detail as you can. He will take it from there, but *you* will have started the action that will be more effective in fighting water pollution than the next ten thousand words you hear on the subject.

In summer, when surface waters are low and warm, and dissolved oxygen already down, our waters are particularly vulnerable to massive fish kills resulting from pollution overloads. Summer also is the season that brings more people to the water than any other. It is almost impossible that a summer fish kill of any magnitude could go unobserved, but many of them do go unreported until long after any fruitful investigation can be launched. If every outdoorsman, and outdoorswoman, who goes fishing or boating or swimming this summer, or who camps or hikes or picnics beside the water, would be alert to spot fish kills, and quick to act in getting samples and reports to the people who need them, then our deeds in water pollution abatement might begin to speak more loudly and more effectively than our words.—J. F. Mc.

LETTERS

Seeks More Sport From Trout Stocking Program

THE April article about the trout stocking program was excellent and a real eye-popper. Trout fishing should be more than the opening day scene of mobs jostling each other to work frantically the few productive pools. It would make just as much sense, as well as make hatchery trout more available state-wide to the general public, to stock every community outdoor swimming pool and let the public exhibit the same opening day approach now shown.

The goal and problem confronting state officials in managing our fishing sport is to make expenditures for various activities nearly in proportion to the use each type of fishing receives. I am glad to learn that due to efficient management, Virginia trout fishing is no longer being heavily subsidized by buyers of other licenses. However, it seems obvious that current expenditures for the trout put-and-take program are not now producing as much sport fishing use and enjoyment as expenditures for other types of fishing.

Good year-around stream trout fishing should be possible and available in Virginia. Toward that goal perhaps this is the time to consider (a) lowering the state-wide daily creel limit for stream trout to four and (b) specially designating a number of streams as "fish for sport" areas, with fishing restricted to artificials without barbs and the fisherman permitted to keep one trophy fish (over 10 inches) per day. Also, our neighbors in West Virginia may have a good idea in permitting year-around trout fishing and thereby eliminating the opening day circus altogether.

William L. Lockwood
Alexandria

Fish Division Chief Bob Martin has an article in this issue describing a trout management project which reader Lockwood might consider a step in the right direction. See "Newest Fishin' Hole," page 11.—Ed.

Lost Dog Problem Solved

I READ with interest the letter from Mt. Elba Hunt Club concerning the stolen dog problem that they have.

I am a member and president of Bon-Woodland Hunt Club, Inc. We have property leased in Powhatan County at Flat Rock. Several years ago we had the same trouble that Mt. Elba Club had, but for the past two years we haven't lost a dog. We would like to take this opportunity to express our appreciation to the people of this community and county for helping us get our dogs back. Especially do we thank the hunting clubs that join our property. Only through cooperation and sportsmanship can this very costly situation be solved.

It is a pleasure to hunt in a neighborhood in which dog stealing is almost as extinct as the dinosaur.

C. R. Battermann
Danville

Virginia Coyotes Identified

THE skull of the wild canid from Rockbridge County, Virginia, that you recently sent to John Aldrich has been given to me for identification. The skull is definitely that of

(Continued on page 26)

Sweating Out the 1966 Waterfowl Regulations

By JIM McINTEER
Chief, Education Division

WITH hunting regulations for non-migratory upland game species now set for the 1966-67 fall and winter season, many deer, bear, turkey and small-game hunts already are in the preliminary planning stage, with dates being blocked out hopefully on calendars, fall vacations scheduled, and choice areas selected, rejected, and reconsidered. This long-range planning will go on at an accelerating pace in the months ahead. But for waterfowl hunting it is a different story. It will be late summer before duck and goose shooting dates can be marked on the sportsman's fall calendar, and such other items as bag limits and bonus birds filled in.

There are two main reasons why annual waterfowl hunting regulations are not announced earlier than they are.

In the first place, there are a number of agencies, state and federal, involved in the setting of duck and goose regulations, and a rather elaborate machinery has been built to permit each agency to play its proper part in accordance with its responsibilities. It takes time for the machinery to function.

Secondly, final actions on waterfowl regulations are not taken until there has been an assessment of conditions on the northern breeding grounds and a measurement of the current year's production. Such assessment and measurement are not possible before midsummer.

Of course, there are the annual winter waterfowl surveys, which provide some preliminary guidance. Wintering puddle ducks in the Atlantic flyway were found to be up an average of 17% over the previous year after last fall's hunting season had closed. Baldpates, pintails and mallards had been the biggest gainers, but black ducks had declined to almost the lowest midwinter population recorded in 18 years. In spite of their gains, the early 1966 puddle duck numbers remained some 12% below their long-term average.

Ducks are just getting down to the serious business of raising the broods which, it is hoped, will make up the great bulk of next fall's flight.

N.A.S. photo by Cruickshank



Commission photo by Kesteloo

The beautiful and popular ring-necked duck did not share in the general increase in winter populations of diving ducks in the Atlantic flyway.

Early 1966 Outlook Encouraging

While it is still too early for officials to make a solid assessment of 1966 waterfowl nesting success, early season conditions in the prime prairie "duck factory" region were highly encouraging according to reports from Ducks Unlimited, the continent's largest private waterfowl conservation organization.

Millions of ducks and geese streaming back to the breeding grounds found an abundance of vitally needed water and plenty of available nesting habitat. Above average snowfall across the prairie areas last winter, following ample rainfall last summer and fall, apparently produced the runoff needed for excellent waterfowl production conditions throughout virtually all of the most important duck producing region. Sloughs and potholes were at levels higher than they have been since the mid-50's!

Ducks were returning to their prairie homes as early as the second week in March, and some of the early nesting species such as mallards and pintails had begun nesting by the first of May. Early nesting, as well as high water levels, is a good sign, as it allows for renesting efforts by birds whose first nests are lost to predation and other factors, and also because it produces large, strong young birds that have a good chance of escaping the effects of late summer drying to which some of the marginal potholes and marshes are subject.

Barring any last-minute curves thrown by Ol' Man Weather, such as late freezes and flooding, 1966 may well be a banner year for ducks and geese.

Diving ducks in the Atlantic flyway showed an even larger gain in midwinter numbers than puddle ducks, although two of the most important species, ringnecks and canvasbacks, did not share in the general increase. Canada geese were 25% more abundant on the Atlantic flyway wintering grounds in 1966 than in 1965, with most of the increase recorded in the Virginia-Maryland-Delaware area.

These midwinter surveys are more useful in measuring long-term trends and short-term fluctuations in breeding stock than in predicting the size of the next fall's duck and goose flights. The size of any fall flight is determined largely by nesting success the preceding summer. Nesting success can be doubled or tripled in a good year, as compared to a poor one, and thus on a year-to-year basis it can more than offset fractional changes in brood stock numbers. One reason why 1966 waterfowl hunting regulations cannot be set now is that the ducks themselves are just getting around to the serious business of raising the young birds which, we hope, will comprise the bulk of the 1966 fall flight.

Flyways and Councils

The waterfowl themselves have established the geographic patterns which have determined the administrative structure of continental waterfowl management.

The ranges of waterfowl species extend from the arctic regions to the tropics. Their movements recognize neither state nor national boundaries. But in their movements between nesting and wintering grounds their flight lanes form four fairly distinct flyways; and while there is considerable trading back and forth and over-lapping between flyways, the waterfowl of each flyway constitute a distinct enough population to warrant management as an entity.

Under various acts of Congress and international treaty arrangements with Canada and Mexico, management of migratory waterfowl is a responsibility of the federal government. Individual states are responsible for regulating hunting within their own borders. The habits of the birds themselves are such that while many management prob-

lems are national or international in scope, other management problems (including the establishment of annual hunting regulations) break down into flyway problems; and the flyway, rather than the individual state, becomes the natural geographical management unit below the national level.

Before the flyway concept of management had developed, waterfowl managers established hunting regulations on a nationwide basis. This had the great disadvantage of forcing severe hunting restrictions on all areas when they were actually needed only in certain natural flyways. Conversely, nationwide relaxations in regulations could permit excessive harvests in some flyways, while elsewhere more liberal regulations were amply justified. Regulation of hunting by flyways not only permits local protection of ducks and geese where conditions warrant, but also permits maximum hunting opportunity consistent with local waterfowl conditions. Once this concept of flyway management is understood, the need for waterfowl management machinery at flyway level, to fill the gap between clearly recognized state and federal functions, is clear. The organization which fills this gap is the Flyway Council. Its history goes back about 20 years.

Back in 1946 a group of northeastern states in the Atlantic flyway organized the Joint Black Duck Committee, which later became the Joint Waterfowl Committee, and the southeastern states set up a similar South Atlantic Waterfowl Committee. In 1947, waterfowl technicians of the northern states in the Mississippi flyway began a team approach to their problems. The following year the Pacific Flyway Study Committee was formed and state and federal workers in the Central flyway also began to search for ways to improve cooperation in their waterfowl management programs. By 1951 the success of these joint efforts was such that the International Association of Game, Fish and Conservation Commissioners was moved to adopt a resolution at its annual convention calling for the establishment of a National Waterfowl Council, and also a formal Council within each flyway. The next year the four Flyway Councils and the National Council were organized.

Waterfowl returning this spring to the prairies of their birth found abundant nesting habitat and higher water levels than have been seen there in the last decade.

Commission photo by Kesteloo



The Atlantic Waterfowl Council is the formal organization representing the 17 state game management agencies in the flyway. Each state has one vote, cast by the Director of the state Game Commission or similar agency.

Two elected representatives of the Atlantic Waterfowl Council serve with a like representation of each other Flyway Council on the National Waterfowl Council. This group, together with representatives of private national conservation organizations, serves as the Waterfowl Advisory Committee to the Federal Bureau of Sport Fisheries and Wildlife.

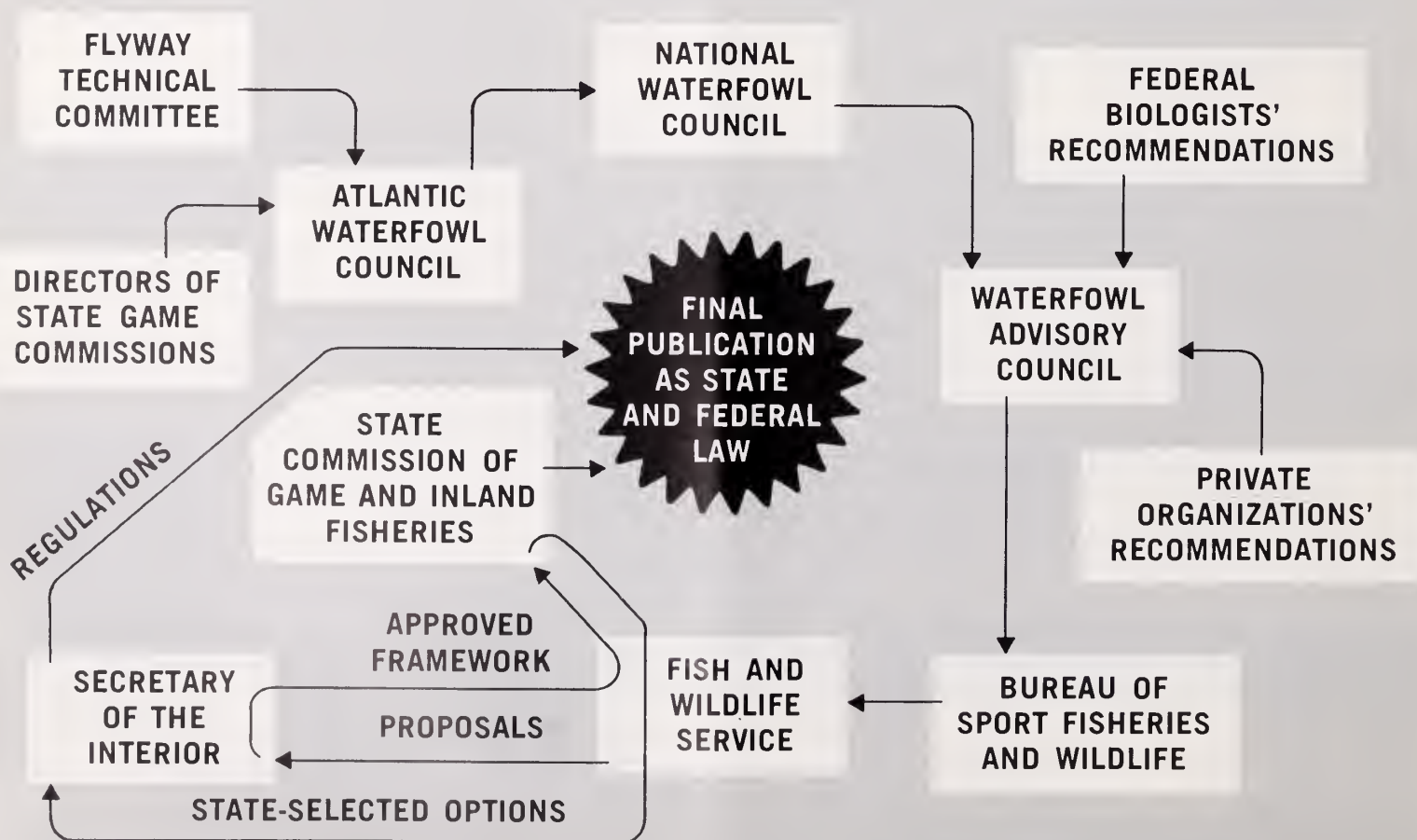
The actual process of preparing annual waterfowl hunting regulations for the Atlantic flyway states begins early in the year with the flyway Technical Committee composed of state and federal waterfowl biologists and technicians. Committee members discuss the past hunting season and current population and management problems, and produce technical recommendations for the Atlantic Waterfowl Council. In early summer the Council, composed of the Directors of the several state game management agencies, meets to formulate general flyway hunting regulation proposals, and to elect two representatives to the National Waterfowl Council to present these proposals to the National Council in Washington. At this point in the process the latest evaluations of current waterfowl production on the breeding grounds is fed in, and the Waterfowl Advisory Council, which includes the National Waterfowl Council and representatives of other national conservation agencies, makes specific recommendations regarding waterfowl hunting regulations to the Director of the Bureau of Sport Fisheries and Wildlife. The Director and his staff then draft the regula-

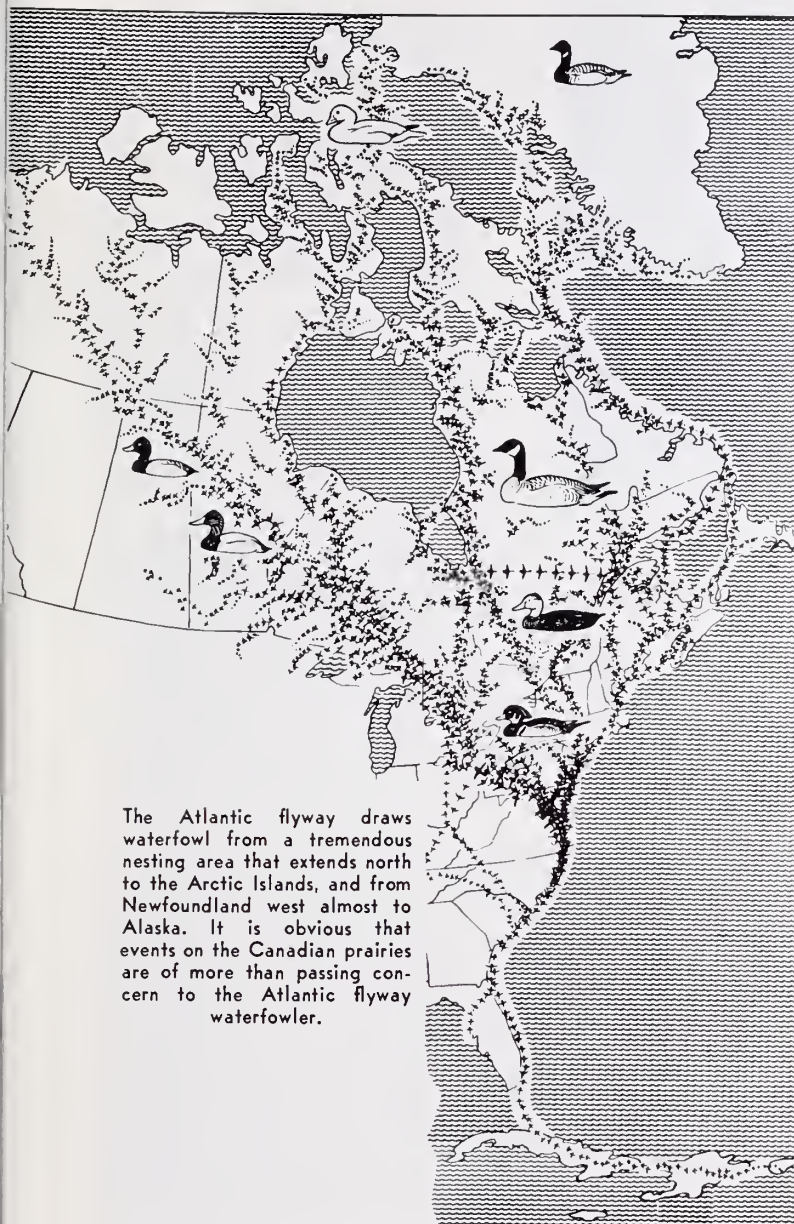


Commission photo by Kesteloo

Heavy fall flights are composed mainly of young birds. In any one year nesting success can be a more important factor than previous winter carry-over in determining fall waterfowl population.

HOW STATE WATERFOWL SEASONS AND BAG LIMITS ARE SET





The Atlantic flyway draws waterfowl from a tremendous nesting area that extends north to the Arctic Islands, and from Newfoundland west almost to Alaska. It is obvious that events on the Canadian prairies are of more than passing concern to the Atlantic flyway waterfowler.

A banded black duck goes on his way. Bands returned by waterfowl hunters have contributed much to the plotting of flyways and to other phases of waterfowl management.



Va. Coop. Wildlife Research Unit photo by Mosby

tions, which are reviewed within the Fish and Wildlife Service and the Department of the Interior, and finally go to the Secretary of the Interior for approval.

The result is a series of broad options, from which individual states within the Atlantic flyway may select their hunting seasons and bag limits. Earliest allowable opening dates and latest allowable closing dates are set, along with the maximum number of hunting days allowable between these outside dates. States may have an option of fewer hunting days and larger bag limits, or longer seasons and smaller bag limits. Reduction in total hunting days may be prescribed for states that elect split seasons. Options may be granted to select specific areas in which "bonus" bag limits (larger than normal limits on certain species) are provided.

It is up to the Virginia Commission of Game and Inland Fisheries to select the options that will be of greatest benefit to Virginia waterfowl hunters and that best fit local situations and needs. Once these options have been chosen and the federal authorities notified, the state waterfowl regulations are published in the Federal Register and become

federal law. At the same time they automatically become Virginia state law under Section 29-137 of the Code of Virginia which provides that "Migratory game birds may be hunted in accordance with regulations of the Commission, which regulations *shall conform to the regulations of the United States government insofar as open seasons and bag limits are concerned.*"

It may seem like a cumbersome and time-consuming procedure, and to those who like to plan their hunting ahead of time it may be irritating to have to wait until late August to find out when the duck and goose seasons will open this year. But the system has its advantages. It permits this year's seasons and bag limits to be based, at least in part, upon an evaluation of this year's waterfowl production rather than entirely upon last year's carry-over. And it permits Virginia sportsmen, through their Game Commission, to select from within a broad framework the hunting regulations that suit them best. For these benefits we endure the agony of suspense and of not being able to answer, until late August, the vital question: "When can we hunt ducks and geese this year?"



An Experiment in Prescribed Burning

EVERYONE, even Smokey the Bear, knows that fire in the forest is bad. Fire is an ever present threat to the whole delicate complex of outdoor resources—soil, timber, water, wildlife. Even “controlled” fires, set by people who really do not know what they are doing, often do serious damage to the land over which they burn.

Because wild forest and brush fires are so disastrous, and their suppression is so difficult and costly; because casual *misuse* of fire to clear unwanted vegetation and ground litter often does more harm than good; and because fire always produces long lasting and subtle effects on the land that are difficult to detect and measure, the place of fire as a legitimate management tool has long been a controversial subject among all resource managers, and especially among foresters. Yet, as intensive pine forest management has come to the Southeast, foresters themselves (almost surreptitiously, at times) have turned to the use of fire and have developed the technique of the “prescribed burn” as an aid in commercial timber management.

The prescribed burn, properly used, can be an economical technique in preparing certain sites for forest regeneration. It is effective in discouraging some undesirable and competing species of forest vegetation, and in reducing the danger of uncontrolled forest fires by removing from the forest floor some of the fuels which feed fires once they get started.

But what is the effect of prescribed burns on wildlife populations and their habitat? The Game Commission manages thousands of acres of timber land on its Wildlife

Management Areas, with the objective of producing maximum sustained annual crops of wild game for recreational use. On these lands, growing and harvesting timber serves primarily to manipulate wildlife habitat, rather than to produce the highest yield of forest products. What place, if any, does the prescribed burn have in the management of timber land on Wildlife Management Areas? What is the nature, from the wildlife point of view, of the plant succession that follows a prescribed burn, and how do game populations respond?

An especially fine opportunity to begin getting some answers to these questions came in 1964. Ironically, this opportunity to experiment with the controlled use of an old enemy of woodland game habitat arose as a result of a serious encounter with another old adversary of the forest manager—an insect infestation.

Early in 1964 the Virginia Division of Forestry made an aerial survey to locate areas infected with southern pine bark beetles in the Piedmont counties along the James River. The survey showed that the beetles were active in timber lands surrounding the Commission of Game and Inland Fisheries’ Powhatan Lakes. The Commission was advised to liquidate the stand, and reforest by planting loblolly pine seedlings.

Industry has been quite successful in regenerating pine stands on large tracts by using prescribed burns in conjunction with timber harvests. The cost of site preparation by prescribed burning on industrial forests in Virginia runs



Plowed fire lines were tied in with existing roads and streams to confine the prescribed burn to the twelve-acre experimental tract that was to be prepared for planting.

By JOHN B. REDD, JR.
Game Biologist

from \$1.00 to \$2.00 per acre. Why not use the Powhatan Lakes area to conduct a training exercise for Game Commission field personnel in the techniques of the prescribed burn, and to study the effects of a properly conducted burn from the game manager's point of view?

The area supported a stand of shortleaf pine and Virginia pine of large pulpwood size, and a strip along a stream that flowed into Powhatan Lakes supported saw-log size yellow poplar and sweet gum. Cedar and unmerchantable hardwoods were mixed throughout the stand. Most of the stand had a closed canopy, and there was little low growing vegetation except along the stream bottom and the lake edge.

Utilization of the tract by game was poor. A single small covey of quail ranged in the general area in which the tract was located. Rabbits were few. An occasional dove was observed in the area.

Pine timber located in the infected area was marked for a pulpwood sale, the sale advertised, and bids opened on April 15, 1964. The buyer was permitted to clear cut all of the pine on the twelve acre tract, under an alternate management plan which did not require the leaving of seed trees. After the pulpwood cut, conditions were such that only 20% of the area could have been planted without site preparation.

During October of 1964 a prescribed burning plan was worked out with Don Bishop, of the Virginia Division of Forestry, and the Chief Forest Warden. The main fuel present was pine laps, that reached a height of about four feet and were concentrated in small areas separated by logging roads. Since the tract to be burned was adjacent to Powhatan Lakes, which are open to the public the year around, consideration had to be given to preservation of the scenic beauty of the shorelines and to the prevention of soil erosion on the slopes surrounding the lakes.

Plowed fire control lines were established on two sides of



Foresters instructed game biologists in prescribed burning techniques. Such factors as wind direction and velocity, humidity, and fuel moisture must be measured and carefully weighed in deciding when to burn.



When all safety precautions had been taken, the fire was started. Most of the cut-over area was covered with pine laps piled four feet high, which had to be removed to prepare the tract for planting.

Prescribed burn in progress, as fire swept clear the debris left by the timber harvest. The burn was patrolled constantly until the last ember was out, and then was checked the following morning. A landowner who sets such a fire is liable for damages and for the cost of suppression if the fire escapes to adjoining property.





After the burn, the tract was ready for planting. Total cost of preparation on this small area was \$4.58 per acre. Site preparation by prescribed burning on larger tracts of commercial forest land is done for between \$1.00 and \$2.00 per acre.

the burn, the lake shore was used as a third line, and a road served as a fourth. Game Commission personnel were instructed by District Forester R. W. Slocum in the field techniques of prescribed burning. A number of interrelated factors are critical in exercising proper control of such a burn. Wind velocity and direction, air temperature, relative humidity, and fuel moisture all must be evaluated before the torch is applied. Prescribed burning is not something to be tried by the inexperienced except under expert supervision. The landowner is liable for damage to adjoining property caused by an escaped fire, and also is liable for suppression costs in the event a fire should get out of control. The area of a burn must be patrolled until the fire is completely out and then rechecked the following morning.

After the burn the Powhatan Lake tract was planted with loblolly pine seedlings. Normally these would have been planted eight feet apart, or about 700 seedlings to the acre, but because of low soil fertility on this site only 600-650 seedlings per acre actually were set out. Five acres were seeded to Korean lespedeza, in strips, at the rate of 15 pounds of seed per acre.

During the fall of 1965 Don Bishop made a reproduction count to check seedling survival. He found that the area was stocked with 560 seedlings per acre, and considered survival good. (The stocking figure may appear low by usual standards, because parts of the transects fell in areas that were not planted.)

Accurate records of expenses were kept in order to determine from this experiment and training exercise just what it would cost to employ a similar method of site preparation, forest regeneration and wildlife plantings following other small scale timber harvests. The burning operation cost

Checking the area a year later. Pine seedling survival was good. More important from the wildlife management standpoint is the heavy volunteer growth of native food and cover plants. Quail, rabbit and dove utilization of the area was up significantly. A continuing study is in progress, designed to trace and evaluate the plant succession on the area year by year.



\$4.58 per acre, which is naturally higher than the per acre cost of doing the same thing on a much larger scale on commercial forests. The cost of establishing a new stand of loblolly pine on the site was \$16.43 per acre, including costs of both planting stock and labor. Approximately five acres seeded to Korean lespedeza at the rate of 15 pounds per acre cost \$3.81 per acre.

Immediately after the burn a study was undertaken in cooperation with the Southeastern Forest Experiment Station to trace the plant succession and ecology on the burned area for several years, and to evaluate changes that occur in wildlife habitat factors and wildlife populations. The diversity and abundance of legumes and other wildlife food and cover plants on the burn site will be compared year by year with those on an unburned "control" area. Data collected after the first full year following the burn are being analyzed now, and will be published late this summer or early in the fall.

Immediately observed effects on game populations themselves were rather startling. Whether these changes will be permanent or temporary remains to be seen, but there is no doubt about the fact that the prescribed burn at Powhatan Lakes was followed almost at once by a sharp increase in wildlife utilization of the area. Where there had been a single covey of quail, in 1965 there were two coveys, one of



View of the burned area from the lake a year later.

twelve birds and the other an exceptionally large covey of twenty-two.

Where a rabbit had been difficult to find before the burn, in 1965 a walk through the area almost invariably resulted in the jumping of from one to four; and after the snows of last winter had melted, a portion of the burned area showed a distinct rabbit "browse line" to mark the height of the snow on the woody plants upon which the rabbits had subsisted when the more favored herbaceous vegetation had been covered. Where before the burn an occasional dove used the area, in 1965 over four hundred at a time were observed feeding on the burn site.

The Powhatan Lakes prescribed burn involved an area of only twelve acres. It is interesting to speculate as to what the total impact on wildlife populations might be if clear cut timber sales and prescribed burns of about this size, aggregating some 10% of the whole, were evenly distributed throughout an entire Wildlife Management Area consisting of hundreds or thousands of acres. As the Powhatan Lake prescribed burn study continues, we expect to learn a good deal more about how this technique may fit into our forest game management plans in the future.

NEWEST FISHIN' HOLE

By ROBERT G. MARTIN
Chief, Fish Division



THERE is a brand new bright star in Virginia's galaxy of public fishing holes, and its name is Hidden Valley Lake. It is new not just because it was opened to the public for the first time this spring, but also because it offers a new and unique kind of trout fishery management in Virginia—a modified kind of “fish-for-fun” management that aims to maintain *high quality* sport fishing all season long and still permit the lucky and skillful angler to kill and keep a few of the lake's biggest fish.

Fishermen who “found” Hidden Valley during the first three weeks of trout season this year found that thousands of rainbow trout (and a few browns) that had been stocked sixteen months earlier in December 1965 now range up to fourteen inches in length. Of the more than three hundred “keepers” (ten inches or more in length) taken during that first three weeks, nearly half measured eleven inches or better.

The lake lies on the Game Commission's 6400 acre Hidden Valley Wildlife Management Area in Washington County at about 3500 feet elevation. When the Commission acquired the tract, the existing lake was found to be sterile and unproductive. Its waters were cold, well supplied with dissolved oxygen, but strongly on the acid side and therefore nearly devoid of fish and fish food organisms. Biologists figured they could change all this; and if they did succeed in making this a fertile rather than sterile lake, they knew that they could rely on its newly acquired productivity to convert stocked fingerlings into large, wild-reared trout at relatively low cost.

The lake was drained and renovated. Flooded standing timber and brush were removed from the upper end. The dam was rebuilt and a water level control structure was installed to permit the release of bottom rather than surface water, so as to increase the volume of oxygen rich zone within the impoundment. Twenty-five tons of lime were applied to counteract the water's natural acidity. This part of the renovating operation may have to be repeated every year or two in order to maintain fertility.

In order to take best advantage of Hidden Valley's productive potential and the fact that this body of water can support a year 'round trout population, the lake was stocked and will continue to be stocked with fingerlings rather than with the catchable size fish. And in order to provide the best

quality fishing, rather than merely the greatest possible numerical harvest of small fish, some of these stocked fingerlings must be given an opportunity to grow to the largest size that this particular environment is capable of supporting before they are removed.

The management plan for Hidden Valley might be described as a “put-grow-and-take” operation, as opposed to the conventional put-and-take stocking of most trout waters in Virginia. More precisely, perhaps, it also could be called a modified “fish-for-fun” type of management. Fishing is permitted only with artificial lures and barbless hooks, and all undersized fish must be returned immediately to the water. This is the usual “fish-for-fun” prescription, such as applies on portions of the Rapidan River and the Staunton River; but on these streams no trout of any size may be killed or kept in possession. On Hidden Valley Lake the skillful angler may keep his “trophy” fish, and release only those which still have significant growth potential in this particular habitat.

Before opening the lake to fishing last April, fish biologists sampled and studied the trout population carefully. Fish in the ten-inch class were plentiful, fat and healthy. Their firm flesh was salmon pink in color, typical of that of wild trout. Smaller fish were less well fleshed out and were growing at a slower rate than the large ones, which unmistakably indicated that the point of serious competition for available food supplies had been reached and that the time for a selective harvest had arrived if steady growth were to be maintained. The lake was opened, and the initial minimum size limit set at ten inches. As the trout demonstrate the maximum size they are capable of reaching in the lake, it is expected that the size limit will be raised, possibly to twelve inches by 1967, and to even greater length later when more experience has been gained in the management of this particular fishery. While this undoubtedly will continue to result in a relatively few “keepers” among many fish hooked and played, sportsmen should remember that this is not a project designed primarily to produce fish for the creel, as is the put-and-take program, but is rather a “fish-for-fun” facility with the added attraction that fishermen are permitted to creel the truly exceptional fish.

As in other impoundments throughout Virginia, the creel limit at Hidden Valley is five trout per day.

Hidden Valley is located 2.5 miles off U. S. Route 19, about equidistant between Lebanon in Russell County and Abingdon in Washington County. Really, it's a great place to fish!

Fingerlings released in Hidden Valley Lake in December 1964 now are in the ten- to fourteen-inch size classes. This lake will yield good fishing results all season.



Sportsmen Praise Work of Retiring Warden Supervisor



ANYONE who has hunted, fished or just cruised on Back Bay during the last 30 years, whether he knew it or not has done so under the watchful eyes of Roland Halstead. Roland retired late last month, and turned the job of Game Warden Supervisor of the Hampton Roads District over to his successor, Warden Supervisor W. S. Rountree, but no doubt he will continue to keep an eye on things, especially on and around Back Bay.

Halstead was born in what was then Princess Anne County, just a few miles from where he has lived and made his headquarters on Back Bay these past three decades. Already an experienced fisherman and hunting guide, he first became a state game law enforcement officer 40 years ago, but transferred to the U. S. Bureau of Biological Survey (now the Fish and Wildlife Service) and then put in a stint as manager of a Back Bay shooting club before returning to the Virginia Commission of Game and Inland Fisheries in 1936. He moved up from Game Warden to Supervisor in 1951, and thereafter directed the work of wardens in the

populous Hampton Roads District which surrounds lower Chesapeake Bay and includes the Eastern Shore.

Like all good wardens, Roland found that the job involved much more than merely apprehending law violators. Public relations and education on behalf of wildlife conservation and habitat improvement, and helping people enjoy the wildlife resources and recreational opportunities in his area, he has found to be among the most pleasant and rewarding of his many duties. That he has been highly successful in these efforts was made apparent at his testimonial dinner on April 18, sponsored by four Izaak Walton League Chapters—Norfolk, Portsmouth, Suffolk and U. S. Naval Amphibious Base—where he was praised as a friend of sportsmen as well as a protector of fish and wildlife.

He may be formally retired now, but it is a good bet that his interests have not changed any, and that he will go right on working for what he believes to be worthwhile. And among the things he believes worthwhile is sound resource management to provide good hunting and fishing—especially on Back Bay.

Halstead has kept a watchful eye on hunters and fishermen on Back Bay for thirty years, and for the last fifteen years has directed all warden activity in the populous Hampton Roads District.

Commission photo by Kesteloo



CONSERVATIONGRAM

Commission Activities and Late Wildlife News ... At A Glance

LEGISLATIVE CHANGES OF INTEREST TO SPORTSMEN. Of all the items passed by the 1966 General Assembly, the one most sportsmen are sure to notice is the increase from \$1.00 to \$2.00 in the resident big game license effective July 1. A similar 100% hike from \$5.00 to \$10.00 on the non-resident big game license was also approved. The extra revenue has been earmarked for salary increases for wardens, biologists, game managers and hatchery workers in addition to meeting other increased operating costs. When these pay hikes are approved, sportsmen should see some benefits as the Commission becomes better able to attract and hold high caliber men in these positions. Extra money for operating expenses will allow the Commission to continue its aggressive program of hunting land acquisition, lake construction, and access area development.

Several other legislative items might accelerate the development of facilities which will be of direct benefit to Virginia sportsmen. Among these is the act creating the Commission of Outdoor Recreation and establishing its powers and duties. The new state agency will have the task of passing out some \$2 million per year in federal aid money to state agencies and local governing bodies to stimulate acquisition and development of outdoor recreation facilities. As outlined in the Virginia Outdoor Recreation Plan, lands and facilities for sportsmen are destined to be an important part of this development. Within the realm of current Game Commission activities hunting land acquisition, fishing lake construction, and access area development were mentioned as specific examples of programs which should be expanded. Almost all other aspects of outdoor recreation development which will be stimulated through this program will be of some benefit to sportsmen.

As a supplement to this program \$750,000 per year in unclaimed refundable marine fuels taxes was earmarked for construction of access roads to public recreational and historic sites, and a Virginia Outdoor Foundation was established to receive and use gift funds for outdoor recreation purposes.

A special 3-day resident/non-resident trout license was approved for waters within the Blue Ridge Parkway. This type of license has been available in Shenandoah Park for a number of years. A special September 1-15 squirrel season for Greene County was rescinded making the season in that county conform with the season set by the Game Commission. Rifles larger than .22 caliber were prohibited in Prince Edward County.

The fire closure law was modified to allow waterfowl hunting from boats and from blinds reached by boat if such blinds are surrounded by water or on unforested islands located at least 300 feet from inflammable vegetation, provided the boats are launched from established landings and do not touch shore within 300 feet of inflammable vegetation except at such landings. Rockbridge County was authorized to spend damage stamp funds for a public fishing lake site, provided the Game Commission approves of the location, and to subsequently sell the site to the Commission for construction of a fishing lake.

Several administrative items were approved by the General Assembly, among them authorization for the Commission to sell its present 2nd Street building preparatory to moving to its new West Broad Street quarters. A land trade between the Commission and the Boy Scouts of America in the Goshen Pass area to mutually benefit both parties was also approved. Sportsmen can look forward to more simplified hunting and fishing regulations when the Commission completes the job of rewording, combining and clarifying existing regulations as authorized by the General Assembly.



Johnson Pond, one of three six-acre warm water fishing ponds constructed on Cumberland Forest which are scheduled to be opened to angling sometime this summer.



This section of Cumberland forest access road is typical of 9.5 miles of new access roads constructed with the aid of APW funds.

CUMBER DE

By HARR
Informa

ANGLERS will get a chance to wet their lines in some new fishing waters on Cumberland State Forest this summer as still another phase of the A.P.W. project completed there a little over a year ago bears fruit. Three fish ponds, each approximately six acres in size, are scheduled to be opened to public angling this summer after being stocked for about a year.

The project was conceived in 1963 to implement the Federal Accelerated Public Works Program which was calculated to stimulate the economy of certain Virginia counties, including Cumberland. The total cost of the project was \$46,556, much of which came from special funds available through the APW program.

In construction of the ponds timber and pulpwood were first salvaged from the sites, then the area to be inundated was hand cleared. The streams in the watershed of each pond were treated to kill rough fish. Fish shelters were constructed in each of the three ponds before they filled with water. Approximately 600 bass, 600 channel catfish and 6,000 bluegill and redear sunfish were stocked in each lake in the early spring of 1965. By opening day (probably July or August) it is expected that the bass will be about 10-12 inches long, the channel cats will weigh about 1½ pounds apiece, and the sunfish will average about a quarter pound.

New aluminum equipment storage shed completed during the project.



CUMBERLAND DEVELOPMENTS

GILLAM
Officer

Swinging bridges
across the Willis
River give both hunt-
ers and fishermen ac-
cess to the other
side.



The boat ramp pictured below on the Willis River, one of three constructed under the APW project, gives anglers with small boats access to some prime float fishing waters.

Other benefits for fishermen include three new ramps constructed on the Willis River to facilitate float fishing in this picturesque piedmont stream. Two swinging bridges were built across the Willis River to facilitate fisherman and hunter access. An access ramp and parking area were also added to 10 acre Winston Lake. Some 2.5 miles of the Willis River were cleared of logs and debris to permit float fishing.

Hunters have had nearly two seasons to discover and take advantage of the many improvements in access and wildlife habitat. Nine and one half miles of new forest roads and nine graveled parking areas helped to disperse the hunters last season. A total of 10 new wildlife clearings were created on various parts of the forest. These were seeded to small grain and ladino clover to benefit quail, rabbits, turkeys and deer. Areas adjacent to the three ponds were also seeded to food plants beneficial to game.



As the water rises in Nettles Pond, below, the details of the three fish shelters may be clearly seen.



Project leader C. H. Shaffer and forest game supervisor W. C. Newman examine a ladino clover planting in one of the 10 newly developed wildlife clearings on Cumberland.



COTTONTAILS

By GEORGE W. CORNWELL
Wildlife and Outdoor Recreation Specialist
Virginia Agricultural Extension Service, Blacksburg

THE early weeks of summer are important to Virginia's cottontail rabbits. These are the weeks when heavy rains may drown young cottontails in the nest. These are the weeks when the mowing bar, and even the lawn mower, cuts protective cover and exposes the nest and young rabbits to the hot summer sun and the hunting animals who think of rabbits as Sunday dinner.

These are the weeks when the housecat and family dog, running loose, find young rabbits easy picking. And then there are the thousands of families who each year catch a young rabbit or a family of rabbits in the back yard and decide they can do a better job of raising the cottontails as pets than the mother rabbit could do.

Fortunately for rabbits and rabbit hunters, nature has granted the female cottontail the capacity to produce up to five litters of young a year, and each litter usually contains four or five baby rabbits! Needless to say, few females are



Commission photo by Kesteloo

During the day mother cottontail stays in a resting place near her nest of young, just keeping her eye on things.

this productive. A rabbit born early in the spring may become a mother the same year, even before she is a year old.

Young cottontails are pink and naked at birth—blind, deaf, helpless, and not much bigger than a man's thumb. The newborn will weigh about an ounce and, if typical, will soon have a white forehead blaze common to most juvenile cottontails. Young cottontails grow swiftly. Their eyes will open in about a week, and the nestlings will leave the nest at two weeks and begin to feed themselves.

It is well they do so, for the mother rabbit may have mated the same day that the litter was born, and she could be halfway on to her next family by the time the current young are ready to leave the litter.

Young rabbits are usually ignored by their mother during the day. The doe returns at dusk for the first feeding of the day, and she will usually give another regular feeding at dawn. The young may occasionally be fed during the night,

but these feedings are extremely difficult to observe. During the day, the doe will usually stay in a resting place nearby the nest, just keeping her eye on things. Cottontail mothers have been known to place themselves between their families and such prowling enemies as a weasel, a snake, and even a well-meaning child.

At a time when rabbits are most plentiful, in these early days of summer, they become important food for crows, foxes, weasels, skunks, and some cats and dogs. About half of the baby rabbits fall prey to "fang, fire, or flood" before they ever leave the nest, in their first two to three weeks of life. Of the cottontails that survive the nesting period, about 80 percent will die before they are a year old. Few will ever live to be two years of age. One of the oldest rabbits on record was shot in West Virginia as an old gray beard of seven years.

The finest rabbit hunter is said to be the bobcat, whose diet may run up to 70 percent cottontail. Nationally, the most important rabbit hunters are the wild dogs, the foxes, and coyotes. Not because they are necessarily the best hunters, but because they are the most common.

Wildlife biologists have invested a great deal of time in the study of cottontails, mainly because they are our number one game animal. Nobody knows how many cottontails are shot each year, but the total probably exceeds 20,000,000. A Missouri wildlife biologist believes that Missourians shot 6,000,000 cottontails in one recent hunting season. At the end of that season, 10,000,000 rabbits remained for the next breeding season.

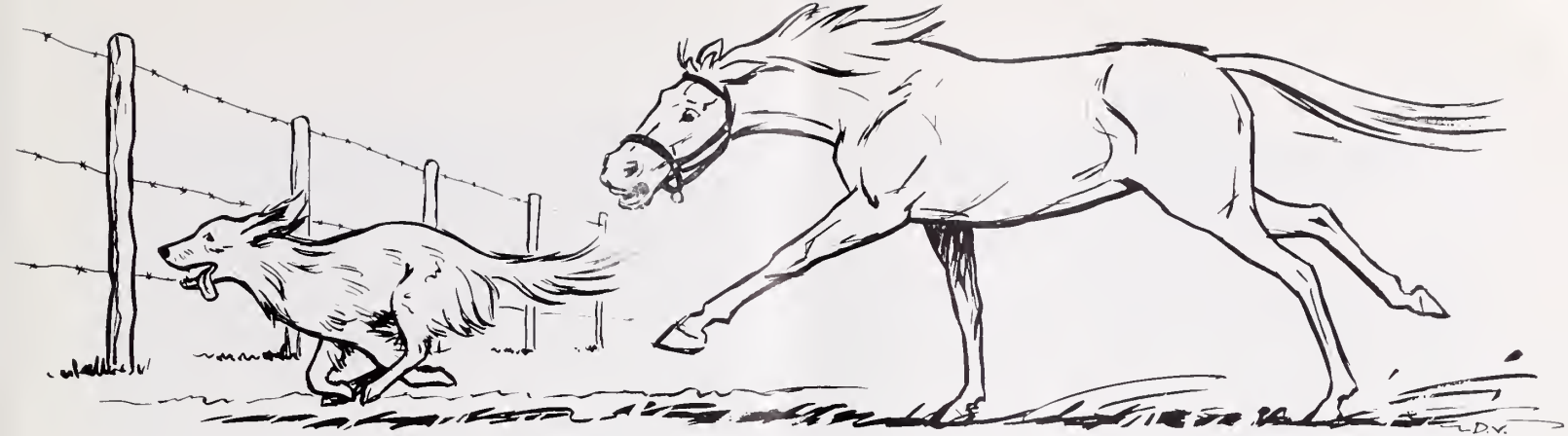
Cottontails are our most easily managed game species. They require very little land to call home. Depending on the quality of the food and cover, for example, a cottontail may use less than an acre for all his life needs.

There is no quicker way to bring back cottontails than by building suitable brushpiles. Cottontails use good brushpiles more than any other man-made cover. Brushpiles usually spell rabbits, particularly when they are located in cut-over lands with sprouting stumps, plenty of shrubs, and new growth. Brushpiles in sheltered areas near croplands are even better.

Unfortunately, most brushpiles built by interested hunters are too small for rabbits, and are quickly broken down and scattered. A successful brush heap should be about 15 feet across and at least five high. You can't go wrong by stacking a few brushpiles of these dimensions around your favorite rabbit hunting ranges. The best location, if available, is near fence rows, creeks, grassed waterways, and on the edges of woodlots. The brush should be piled over rocks, logs, culvert pipes, an old car body, or abandoned farm machinery.

A good foundation of this type lets grass and weeds grow around and in the brushpile, and therefore makes the pile that much better cover.

As good as brushpiles are, it's hard to beat the best rabbit habitat—dense thickets of blackberry and other shrubs, mixed in with grasses. Landowners who want better rabbit hunting can easily have it by mixing brushpiles, dense shrub thickets, and grass openings.



THE PSYCHOPATHIC MARE

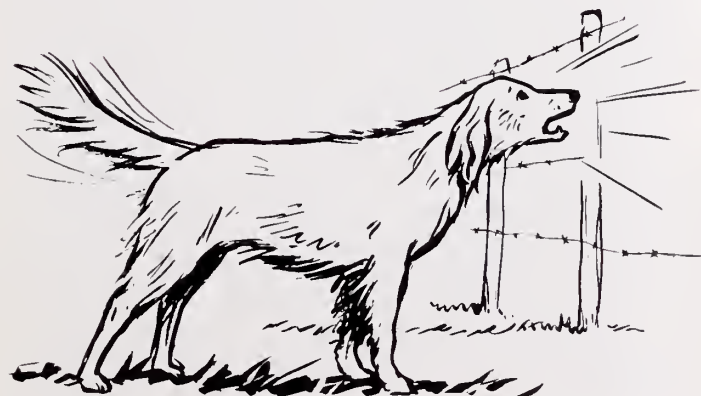
By H. R. TERHUNE
Wyckoff, New Jersey

THERE were three of them with guns cradled as they tramped the bumpy lane toward the silent Virginia farmhouse. There was an old guy, his youngish son, and the preacher. The preacher and the son were about of an age, but the old man was reared on bumpy lanes so the three were in stride with the setter ranging a piece ahead.

The setter was an Orange, fully qualified by experience and registry. Robin had hunted north and south for many years, and now she was right proud to be at the day's task. Actually old Rob loved her work so the task to her was indeed a pleasure, for somewhere in that tumbled rough there was a treasure.

Working quickly ahead of the old man, the son, and the parson, the dog turned and ducked into a pasture. Busy with her nose and the exciting news it registered, she seemed to have lost all sense of vision and of hearing. Robin was bred for the hunt and a setter that is a master hunter has already passed the life and death test. But little did the three hunters or the completely intent bird dog realize that in a moment she was about to pass another life or death test.

Right now she was the confident graduate of a rough training school. As a pup she had proven "birdy" and at six months qualified for her "point." Some of her brothers and kennel mates failed to pass training school and little mounds mark the spots where their career was abruptly terminated. For, a kennel that has a reputation for bird dogs keeps a grim but uncompromising standard. A setter must possess the hunt instinct and a nose for game; otherwise it is permitted to hear but one gun shot, and that, its last.



Old Rob, now well in the pasture, was totally unaware that the huntress was suddenly the hunted. Rather than the hunted, she was the calculated victim with death already thundering toward her. A white mare's citadel was invaded by a hated dog. Long ago she had been attacked by a crazed mongrel or was it the farmer's own stable dog that tore her only colt apart? Some monstrous apparition distorted the normal kinship of horse for dog and, in a flash, a killer was created.

"Hey Robin! Look out!" yelled the young guy. But old Rob, her nose on a sweet savor, was oblivious. The incense of that track was narcotic, completely dulling all other faculties. "ROBIN!" now screamed the young guy in higher pitch, and Robin threw up her head just in time to see a thundering avalanche of white bearing down on her. The old guy and the parson now joined in a yelling chorus. The old guy thought, "there goes my dog," and of course the parson thought of eternity. But the dog had caught the final warning just in time.

With a twisting spring, she wrenched her body to the side. In that split second, she was off target to that butting head. As the contorted body of her adversary turned to loose a series of deadly flying hoofs, the dog was off! The old guy thought of a neanderthal man with a saber toothed tiger clawing at his speeding heels. The young guy thought of the promised pup from Robin's next litter, and the parson still thought of man's eternity.

The spectacle was now at climax and death was racing literally to the line. The setter had a 20 foot lead on the mare with 200 feet to safety under the barbed wire fence. The pounding of those vicious hoofs lent terror to her flying paws. On a straight run, any ordinary horse can outrun a dog and that white mare was no exception. The gap was closing, but now Robin knew it was really a game of life or death for keeps. Every sinew was strained and every instinct was whetted. She shot a precious glance over her shoulder—the gap was closing. With a front paw swing, she arched at right angles. The mare plowed 20 feet into the fence and Rob streaked home a winner.

But now frenzy gave way to justifiable indignation. Robin wheeled and, with each hair bristling, she let that mare have a scorching of every vitriolic cuss word she had picked up in six years of dog profanity. And if that mare got half the message of those hot words, I'm sure she was burned to a crisp.

The wonder of the experience—did the old dog realize that the prize she won that day was her life?

MORE THAN JUST THE FISHING

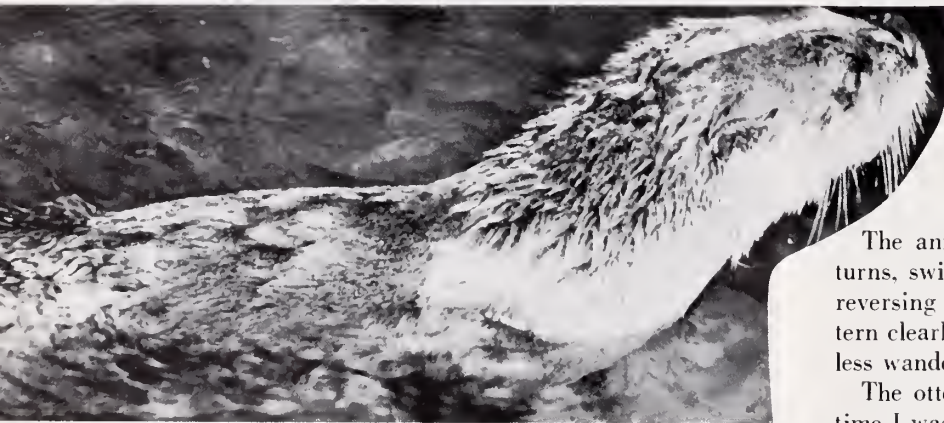
THE weather for most of that day was stormy—black clouds, wind, and showers. I went fishing in the afternoon anyway, up Dunlap Creek, and caught a few sunfish on a spinner. I sat in a boat and shivered through the showers and warmed and dried in the sun between them. My hardy nephews waded in the cool stream, catching one sunfish after another on hellgrammites. I didn't give much thought to trout fishing then, but after supper I noted the weather was brightening. I had some doubt about the chance of success, but decided to try the trout at Cathright Wildlife Management Area, on the Jackson River above Covington.

I drove slowly to the upper part of the property; with daylight-saving time in effect there was plenty of time after supper to get there for the best fishing of the day. I parked at the boat landing, gathered my gear, and crossed the river. Two fishermen were fishing from the footbridge, drifting lizards under a log without success. I walked along the high bank, stopping once to look downstream. Far downstream a fish—a trout I thought optimistically—jumped clear of the water. A five-minute walk then put me across the neck of the deep bend of the river at that point to a favorite hole, and I began to hurry through the thick brush

of moon showing. As I approached the field near the bridge I noted a yellowish haze just above the knee-high growth. The haze, lighter than the growth itself, strongly contrasted with the gloom of the tall trees bordering the field and the dark purple of Alleghany Mountain beyond. It was a beautiful sight. My steps slowed as I walked along the edge of the field, and for a few minutes I forgot about fishing.

I went up on the high swinging bridge before complete darkness and stopped near the middle to watch night settle upon the river. The big deep pool was calm. The last light in the sky was reflected on its surface, but at the head of the pool tall trees cast black shadows upon the quiet water. I stood there, occasionally looking downstream at silvery ripples and up at Coles Mountain, the blue of it getting darker and darker. It was while looking downstream, and only the sky still showing light, that I was first startled by a tremendous KA-PLUNK-SPLASH in the very dark tree shadows at the head of the pool.

My first thought was that a very big trout or bass had jumped. I stood looking upstream for several minutes. I could see only some ripples spreading from the shadows close by the bank. And then as I watched it happened again, farther out in the pool: the hollow-sounding thump and splash that I knew then was too great for any fish in that river. I saw it then—or its wake rather. It worked slowly downstream, forth and back across the broad pool. At first I could see no pattern in its travel, but as it came closer I saw that there was a deliberate pattern—a thorough one.



By WARREN R. FITZGERALD

Warrenton

to the head of the pool.

Three weeks earlier I had fished that spot the last half hour before dark. The river was higher at that time and the air was full of insects, the swift water seeming to be full of feeding trout. I caught three and hooked and lost two others that evening.

But this time it was a different story. Even in the fading light every rock of the stream bottom was visible—always a bad sign. There were few insects in the air, and only a few small fish were feeding, jumping from the water after some unseen bug. The “old faithful” flies failed to produce. Another fisherman arrived and began to cast a spinner, but with no success. He observed that “the trout are just not doing right today.” His partner came along soon, but apparently he had given up for the day. He sat on the bank and watched. I finally got a strike, the only one of the evening, and reeled in a small sunfish.

With the company more than I cared for when trout fishing, I decided to go back to the big pool at the boat landing to see if there was any action there. I quickly crossed the bend of the river, the light now rapidly failing and a sliver

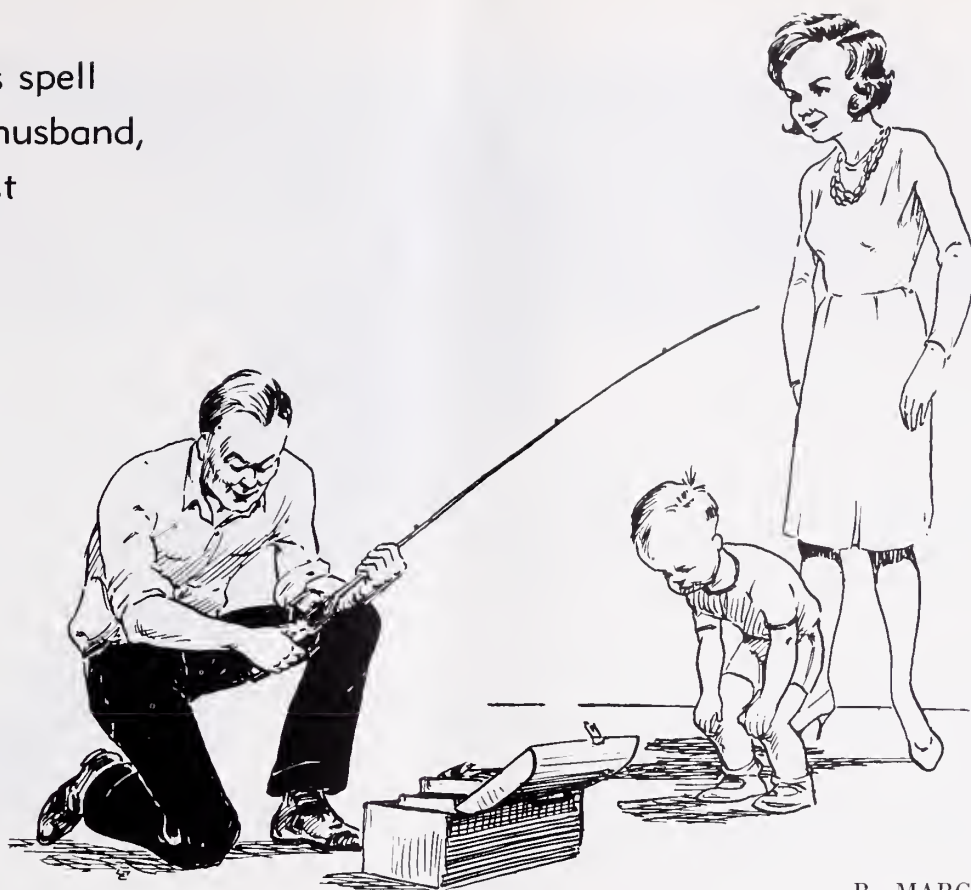
The animal searched in loops, making sharp 180 degree turns, swimming slowly for perhaps 15 feet and then again reversing its direction. Only for a short time was this pattern clearly observable. It was followed by a seemingly aimless wandering about and a sudden dive.

The otter dived three more times as I watched, and each time I was startled by the abruptness of its plunge. Obviously it was hunting fish, possibly the same trout I had come to fish for. I got a few dim glimpses of the long, slim animal, as it passed below me where the light happened to be just right. Otherwise, all I could see was a dark spot at the head of a wide wake. The otter ended its search, swimming slowly, but in a beeline, to the head of the pool. The show was over.

I went to my car, packed away my gear, and headed for home. There had been no others at the swinging bridge when I had returned, and as I drove through the Cathright property I saw no other cars or their lights porpoising along over the field toward the paved road.

I thought, “I guess I am the only person crazy enough to hang around this river when the trout were not hitting even a little bit.” And next I thought: “But I am also the only person who saw the haze over that field, and I am the only person who saw that otter tonight.” And also, as I drove home in the cool night air, I thought how this was always the case: how there was always something seen, or heard, or somehow experienced, to make the hunting or fishing trip worthwhile, and make an empty creel or game bag unimportant.

Spring casts its spell
on an angling husband,
but all isn't lost
for the



By MARCIA PRESTON

Fishin' Widow

I CAN tell it's spring again, not only because of new growth in the outdoors or a new feel in the air, but more particularly because of the absence of my husband from home.

Every year, as regular and dependable as the buds on the elms or the crabgrass in the back yard, our family room begins to blossom with fishing tackle that has been idle most of the winter. This is the first indication to me that I had better enjoy the company of my husband while he is home, because very soon the "call of the wild" will be stronger than that of home cooking. So I leave the supper dishes and go in to sit by the easy chair where he is busy inspecting each plug and reel.

Since he is basically uncommunicative while thus occupied, I soon fall to my own thoughts. Now I remember the spring (before the children came) that I determined not to be a "fishing widow" but a fishing companion instead.

It was one of my most memorable seasons. He was quite patient with me (we hadn't been married long!) and taught me to cast, rig my own line and even to use an inner-tube float. He also gave me elaborate instructions on what to do in the event of a strike—which, unfortunately, I had few occasions to use.

Oh, I did catch a few small ones, but as I remember, my husband told me as tactfully as possible that they were a little too small to keep. But to me that wasn't important. What *was* important was the experience of being close to nature—with time to enjoy it.

We fished mostly in farm ponds. My favorite time was

just before dusk on quiet summer evenings when the only ripple on the water was made by our plugs or the movement of our floats. Even the pond water looked clean and blue then, and the lighter pale blue of the sky behind green willows was the most beautiful color combination in all the world. What misinformed teacher in my gradeschool days taught me that green and blue are not compatible colors?

It was on an evening like this one, and I was completely lost in my own thoughts, that the silence-shattering strike of a big bass shocked me out of my aesthetic trance. The strike wasn't mine, but my husband's. This was fortunate, for had it been mine I would have lost the fish and probably the rod and reel as well.

But he played the fish with all the finesse of an expert with long hours of practice and experience. It was a beautiful largemouth that weighed out later at five and a half pounds.

Although this spring I won't be able to go with him as often, each time he leaves I recall the wonderful time I had and somehow I just can't object to his going, even though he doesn't miss a weekend all spring. How can you object to a person, any person, wanting this kind of sport and pleasure? I feel, as many fishermen's wives must, that since a man does require these interests away from home I can think of nothing I would rather he did than fish or hunt.

So to any potential "fishing widow" who may read this, I have one final statement of encouragement. Go with him when you can, and when you can't, remember there are many other things he could be doing that you'd really disapprove of. And besides, there are bound to be a few weekends when the fish just aren't biting!

Reprinted from *Oklahoma Outdoors*, courtesy of Oklahoma Department of Wildlife Conservation, publisher.

*Bird
of
the
Month:*



Crested Flycatcher

By DR. J. J. MURRAY
Lexington

THE flycatchers form a group of birds peculiar to the New World, with more than 350 species, mostly tropical. Of these only thirty species are found in the United States, less than a dozen of these occurring with any regularity in Virginia. These flycatchers belong to a group of birds known to scientists as "songless perching birds." The crested flycatcher may be songless, but it is far from noiseless. To me one of the clearest signs that spring is at hand is the raucous but attractive call of this bird. The most common note is a loud "hreep, hreep," but it has many other somewhat similar calls and whistles. Some of them indicate alarm, but others simply seem to be the expression of abundant energy.

At Lexington where the bird is a common summer resident this salute to spring is first heard about April 20. Within less than a month nest building will commence, and in another month the young will be on the wing, catching insects with their parents. The schedule for these happenings is not much advanced for Tidewater.

The crested flycatcher wants shelter for its nests. An old hole in a tree or a post, the distance from the ground mattering little, will suffice. A mailbox is a favorite location. Many a patient bird lover has to put up a temporary receptacle for the family mail until the crested flycatchers have done with

the regular box. But who would not be delighted with such a family of lodgers? I have even known of nests down in a pipe placed as a guard for a guy wire, the bird blocking the pipe with sticks so that the nest would not be too far from the opening. There is a habit, practically universal with this species, of putting a cast-off snake skin in the nest. As to the reason for this there seems to be no satisfactory solution. The eggs, usually four to six, are cream-colored, marked with strange scrawls of black and purple and lavender.

The crested flycatcher is 8 or 9 inches long. The name of the bird comes from the form of the feathers on the head, which seems rather puffed than crested. Like many of the larger flycatchers, it has the habit of erecting these head feathers when alarmed. The bird is brownish above, with a tinge of olive; the upper part of the breast is gray; the sides and lower breast are pale yellow; while the larger wing and tail feathers are bordered with rufous. This reddish color shows best when the bird is in flight.

Since the food of this flycatcher consists almost entirely of insects and animal matter (about 95%), it is almost completely beneficial. Its choice of insects consists almost entirely of those harmful to human interests. It does sometimes take a few bees, but certainly not enough to be of any great significance.



Edited by DOROTHY ALLEN

The fourth, fifth and sixth graders of Little Creek Elementary School, Norfolk, were among the first to have a science fair this year. They produced outstanding exhibits worthy of older students. A heavy emphasis on conservation in their classroom studies was encouraged by one of their teachers, Mrs. Lucy Herman. The students were allowed to enter an exhibit in one of two categories: general science or conservation.

Judging hundreds of projects and awarding prize ribbons were Miss Elizabeth Fooshe, head of Norfolk's Gifted Child program; Mr. Mike Spessard, science teacher at Azalea Gardens Junior High School; and Mrs. Dorothy Allen, Education Officer of the Virginia Game Commission.

In connection with the science fair Mrs. Carolyn S. Whittaker, Music Resource Teacher, conducted a creative song project in conservation.

Mrs. Herman and Mrs. Whittaker certainly should be commended for the outstanding conservation projects they are promoting.

Book Review

In *Bears Live Here* (Doubleday, \$3.25), Irmengarde Eberle presents a carefully researched nature study of one year in the life of a family of black bears, with emphasis on the growing-up of two charming little cubs. For youngsters up to 9, *Bears Live Here* is copiously illustrated with photographs.



Science Fair

First Place 6th Grade

NATURE'S MELODIES

Words and Music by
Barbara King Grade 6
Little Creek School

The sound of rush-ing wa-----ters, The beau-----ty of tall trees

The splen- dor of grass - y mea- dows Are na- ture's mel-o- dies.

2. They sing a song of gladness
When not disturbed by man,
And provide our food and shelter
For this was all God's plan

3. We must not disturb this balance
By foolish, careless deeds,
But rather use them wisely
To save for future needs.

Essay Winners



Remsen photo, courtesy Martinsville Bulletin Game warden Edgar L. Lemons, right, presents checks and certificates to two winners in the Annual Wildlife Essay Contest. The recipients are, from left, Anthony Greg Harrison and Wanda Clark, both sixth graders at Albert Harris Elementary School. Both winners were awarded \$5 checks for their entries.

Pictured right:

Lacy Whitmore, top eighth-grade winner, receives his award from Attorney General Robert Y. Button. Lacy is a student at Riverheads High, Augusta County.

Winner Expresses Thanks

Dear Mrs. Allen.

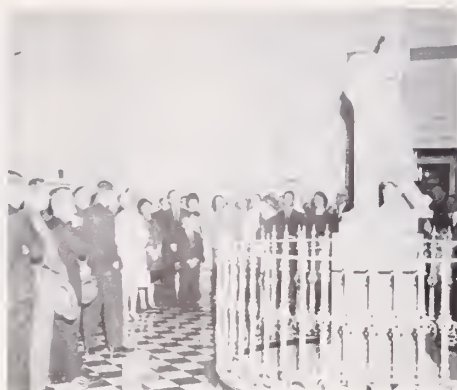
I wish to express my appreciation to all who made this day a pleasant one for me. I appreciate the \$50 check; and I enjoyed the activities and the lunch. Thank you!

Lacy T. Whitmore
Raphine



ON APRIL 22

By DOROTHY E. ALLEN
Contest Coordinator



Guests of the day assemble around the famous statue of George Washington in the Capitol's rotunda.



The Capitol hostess presents historic information on the tour of the Capitol.



Mr. Franklin D. Kizer, Supervisor of Science, Department of Education, addresses the assembled guests.



Warden Wesley Haden, President of the Game Wardens Association, presents a plaque to scholarship winner Teresa B. Waddle.

IT rained! Virginia was around seven inches short on moisture and true conservationists could not argue with the weather. However, it was the one day of the year the Commission of Game and Inland Fisheries and the Virginia Izaak Walton League of America would have liked to have had a sunny day for the winners and guests of the 19th Annual Wildlife Essay Contest. The rain did not seem to dampen the spirits of the honored guests; it just curtailed part of the planned activities for the day.

After a tour of the Capitol building, guests and friends assembled in the Senate Chamber for the awards ceremonies. Brief remarks were made by representatives of the Virginia Board of Education, IWLA and Commission dignitaries. Warden Wesley Haden, President of the Game Wardens Association presented a beautifully engraved plaque to the \$800 scholarship winner, Teresa B. Waddle of Bland High School, for her essay on Conservation: Harmony Between Men and Land. Attorney General Robert Y. Button presented the awards to the scholarship winner, the eight top winners of each grade, fifth through twelfth, and principals, teachers or representatives of forty 100 percent schools (see list of winners).

Following the ceremonies, the winners dashed through the rain to board a bus for a tour of Richmond. The historic sites were viewed through rain splattered windows instead of the planned disembarking from the bus at some of the more prominent historic museums and monuments.

Had the weather permitted, a picnic lunch followed by a skeet shoot and archery demonstration was scheduled at the IWLA Richmond Chapter's park near Midlothian; instead the guests were served at the Ginter Park Community House.

In spite of the rainy day the 19th Annual Wildlife Essay Contest came to a successful close with the winners displaying sunny smiles as they clutched their certificates and checks with determination to match their wits again in September with fellow pupils competing in the 20th Annual Wildlife Essay Contest.

The announcement of the 1966-67 contest will appear on the back of the September issue of *Virginia Wildlife*.



Scholarship winner Teresa B. Waddle proudly shows her plaque to Attorney General Robert Y. Button as Crafton Barker, Conservation Chairman IWLA, looks on.

19th Annual Essay

AWARDS

Commission Photos



At the buffet luncheon Lewis E. Mitchell, Jr., East End High School, top Senior winner, awaits his turn in the serving line.



Attorney General Button and Crafton Barker pose with top essay award winners.

19th ANNUAL WILDLIFE ESSAY CONTEST RESULTS

Title: Conservation: Harmony Between Men and Land

SCHOLARSHIP AWARD: \$800

Teresa B. Waddle, Bland High School

GRAND PRIZE WINNERS: \$50

Senior Grade: Lewis E. Mitchell, Jr., East End High, Mecklenburg County

11th Grade: Sherry Martin, Holston High, Washington County

10th Grade: Carol Handy, Clarke County High, Clarke County

9th Grade: Milton M. Ragsdale, McLean High, Fairfax County

8th Grade: Lacy Whitmore, Riverheads High, Augusta County

7th Grade: Terica Pennington, McHarg School, Montgomery County

6th Grade: Judy Catlin, St. Joseph, Dinwiddie County

5th Grade: Sharon Lyn Fleetwood, Wakefield School, Sussex County

SCHOOL AWARDS—\$10 EACH
100% PARTICIPATION

Meriwether Lewis Elementary, Charlottesville
Callaghan Elementary, Covington
Jeter Elementary, Covington
Greenville Elementary, Greenville
New Hope Elementary, New Hope
Spottswood Elementary, Spottswood
Wilson Elementary, Fishersville
Bland Elementary, Bland
Rocky Gap Elementary, Rocky Gap
Buckingham Central High, Buckingham
Buckingham Elementary, Buckingham
Gladesboro Elementary, Hillsville
Ettrick Elementary, Ettrick
Falling Creek Elementary, Richmond
Harrowgate Elementary, Chester
Boyce Elementary, Boyce
Clarke County High, Berryville
St. Joseph Elementary, Petersburg
Tappahannock High, Tappahannock
Blessed Sacrament, Alexandria
Immanuel Lutheran, Alexandria
Stonewall Elementary, Clearbrook
Emporia Elementary, Emporia
Windsor High (Comb.), Windsor
Kenbridge Graded Elementary, Kenbridge
Buckhorn Elementary, Union Level
McHarg Elementary, Radford
Little Creek Elementary, Norfolk
Wicomico Elementary, Wicomico Church
Mt. Nebo Elementary, Blackstone
Gar-Field High, Woodbridge
Cathedral Central High, Richmond
Green Valley (Comb.), Roanoke
W. H. Keister Elementary, Harrisonburg
Honaker Elementary, Honaker
Chancellor Elementary, Fredericksburg
Livingston Elementary, Spotsylvania
Wakefield Elementary, Wakefield
Hayter's Gap Elementary, Holston
Holston High, Damascus



Teachers of four of the forty 100% schools receive their school awards from Attorney General Button.



Guests disembark from the bus after a historic tour of Richmond.



The Ginter Park Community House served as the picnic luncheon site.



IWLA members and guests enjoy a picnic lunch at Ginter Park Community House.

al Wildlife Contest

RDS DAY

Kesteloo



Loblolly pines were given the guests as living mementos of the occasion. The pines were donated by the Virginia Division of Forestry.



Edited by HARRY GILLAM

Cold Sport



Game Manager Eugene Litton checks licenses of pay-as-you-go anglers on Big Tumbling Creek following an early April snow storm which blanketed the Clinch Mountain Wildlife Management Area.

Big Ring Perch



Billy Lesher holds a one and one-half pound yellow perch caught by his father, Bob Lesher, in Burnt Mills Lake near Suffolk. The large "ring perch" was caught on a live minnow.

Firearms Furor Resumes

The special Senate subcommittee on Juvenile Delinquency favorably reported out S.1592, the so-called Dodd Firearms Bill, and sparked a new wave of protest from sportsmen, gun collectors and others. Following heated hearings last year the controversial bill had remained deadlocked in the subcommittee. The bill will now be heard by the full Senate committee on the Judiciary before moving to the Senate floor, if approved.

Several of the most objectionable features of the original bill have been dropped, but those who disapprove of attempting to control crime through the regulation of gun ownership find little comfort in these changes. As reported by the subcommittee the bill will prohibit the sale of pistols and revolvers by mail from out-of-state, and prohibit all handgun sales to persons under 21 years of age and to nonresidents of the state where the purchase is made. Persons buying rifles and shotguns by mail would be required to furnish a notarized affidavit stating that they are over 18 years of age, have no criminal record, and that local laws do not prohibit such sale. Local law enforcement officials would be notified of the purchase by registered mail, and shipment could not be made until 7 days after notification of acceptance or refusal of this registered letter. Persons under 18 years of age would be prohibited from buying guns under any circumstances.

In addition to restrictions on purchase of firearms, the importation of surplus military firearms and other foreign firearms would be restricted by the bill. Subcommittee action on S.1592 closely followed the President's message to Congress regarding the "War on Crime" in which he urged prompt passage of the measure. The Virginia Commission of Game and Inland Fisheries voiced formal opposition to the bill in June of last year for, among other reasons, the unnecessary complications it would invoke on the purchase of sporting arms.

Boat Ramp Guide Available

A 24-page guide to Virginia lakes and streams, adapted from the recent *Virginia Wildlife* series on this subject, is now available free from the Commission of Game and Inland Fisheries. The publication contains detailed information on all Game Commission, Corps of Engineers and Tennessee Valley Authority ramps located in Virginia. Such popular fishing and boating areas as Buggs Island Lake, Philpott Reservoir, Claytor Lake, South Holston Res-

ervoir, the Shenandoah and James Rivers, the Northern Neck and Virginia's Eastern Shore are included.

General area maps help locate the ramp in relation to main access roads, then detailed maps and descriptions guide users right to the specific ramps.

Bedford Rack



This impressive trophy was bagged in Bedford County last season by James R. Mayhew of Bedford. These "Basket Crown" antlers are only 2 inches apart at the termination of the main beam. Mount by E. K. Carter, Taxidermist, Vinton.

Big Fur Catch



John Beber, Chesterfield County resident, is shown with his 1965-66 fur catch. This impressive pile of pelts includes 131 beavers, most of which were trapped in areas where they were causing damage. Also shown in the picture are the pelts of 14 otter, 10 mink, 211 muskrat, 51 coon, 30 opossum, 1 red and 1 gray fox caught by Beber during this highly successful season. He classifies his trapping activity as a hobby.



Edited by JIM KERRICK

Installing an Outboard

How you mount your outboard motor is vital to performance. This applies to small outboards as well as the larger units.

There is no simple "rule of thumb" for the correct engine height or vertical angle. Each boat is different and every installation must be handled differently. Service experts also point out that although height and angle are two separate things, they must be considered together.

As a starting point, the engine should be mounted so that the cavitation plate is parallel to and slightly below the bottom of the boat. The angle adjustment rod should be set in the second notch. Remember, these are just starting points, and both engine height and lower unit angle can and should be changed if circumstances call for it.

A shakedown cruise is a must, and it should be carried out under normal load situations. Two extra passengers, a soft drink cooler, extra fuel cans, and the general assortment of boating gear will have a tremendous effect on how your boat handles and performs.

Once underway there are four things to watch for: (1) cavitation, (2) excessive spray, (3) porpoising, and (4) plowing. If any of these symptoms occur, you can be pretty sure the motor is not mounted properly.

Cavitation and excessive spray can usually be traced to the height of the motor. Cavitation occurs when the engine is mounted too high on the transom and air is introduced into the path of the propeller. Air has less resistance, and the propeller is free to turn at a much faster rate.

Excessive spray, caused by the spray plate on the lower unit, means the engine is mounted too low on the transom.

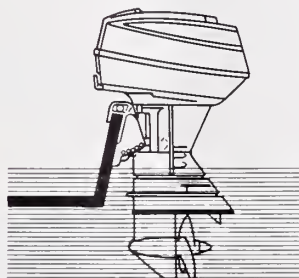
Porpoising (bow seems to bounce on the water) and plowing (bow seems to smack into the water) can often be traced to the angle of the lower unit. One word of caution: the weight of passengers and extra gear could be the culprit. To correct porpoising, move

weight forward. If the bow is plowing, move weight aft.

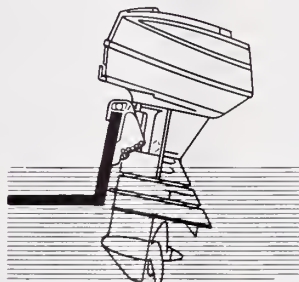
If rearranging equipment doesn't solve the problem, you may have a minor defect in the hull. Changing the angle of the lower unit will compensate for this defect, although you may sacrifice some performance efficiency. Porpoising can be cured by moving the lower unit closer to the transom. Plowing can be cured by moving the lower unit away from the transom.

Throughout the installation, remember that your goal is efficient propeller thrust. This occurs when the path of the propeller is parallel to the water level when the craft is underway.

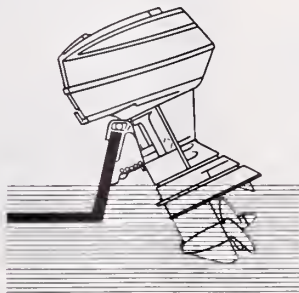
Courtesy of Evinrude Motors



Recommended position of motor for maximum performance.



Position of motor to lower bow of boat.



Position of motor to raise bow of boat.

Used Outboard Can Be Good Buy

If you're looking for a good buy on an outboard, check the used motor market. Booming new motor sales mean marine dealers have a wide selection of models to choose from, and the careful shopper can enjoy years of trouble-free boating for a relatively small investment.

The most important consideration is, who manufactured the motor and who is attempting to sell it. Make sure replacement parts are available now and will be in years ahead.

It's good advice to buy only from an established marine dealer. Although many private owners are operating in good faith, too many buyers have been stuck with "hot" motors, and we're not talking about speed.

Operate the engine, either in a test tank or in an actual demonstration run. Easy starting and a smooth idle usually indicate that the powerhead is okay. If possible, remove the intake cover and examine the piston rings and piston cylinders for signs of excessive wear.

If the powerhead checks out, take a look at the lower unit. A noticeable dent or gash should serve as a warning that the unit struck an underwater object. Serious damage could have resulted to the housing and gears. Remove the drain plug and check for water in the lubricant. Its presence means the outer housing is cracked or broken.

An actual demonstration run will give you further evidence to buy or not to buy. Watch for faulty acceleration or excessive vibration. Use a tachometer to make sure the engine is turning at least its rated revolutions per minute. Changing propellers could correct either of these problems, so don't condemn too early.

Clean Boat Bottom

Marine growth and grime collected on the bottom of your boat can cut as much as 30 percent off top speed. Whether your boat is in fresh or salt water, check the hull periodically and give it a thorough washdown.

LETTERS

(Continued from page 3)

a coyote (*Canis latrans*), and is typical of that species in every way.

You may be interested to know, however, that this is not the first coyote taken in Virginia. Several months ago, Nelson Swink brought me the skull of a male coyote recently killed in Rockingham County. The skull is presently on loan to the Museum of Comparative Zoology, but you can obtain details on its capture from Mr. Swink. His address is Bureau of Sport Fisheries and Wildlife, P. O. Box 606, Harrisonburg, Virginia.

It still cannot be determined if these specimens are valid range extensions for the species, or if they were escaped pets. Judging from their large size, I would guess they both represent the easternmost race of coyote (*thamnos*), but of this I cannot be certain, since coyotes have a wide range of individual variation in size. It will be interesting to see if more specimens are forthcoming from Virginia.

John L. Paradiso

Bird and Mammal Laboratories
Division of Wildlife Research
Bureau of Sport Fisheries and Wildlife
Washington, D. C.

The letter quoted above was addressed to Doctor Henry S. Mosby, Department of Forestry and Wildlife, V.P.L., and a copy was forwarded to us by Doctor Mosby as an item of interest to Virginia Wildlife readers. Doctor Paradiso is Systematic Zoologist at the Bird and Mammal Laboratories.—Ed.

Summer Hobby



THIS is just one of my one hundred seventy-five groundhogs killed last year. This one weighs 15 pounds. I am a retired farmer. My hobby is to get around in my jeep and hunt groundhogs.

Everett J. Townsend
Farmville

Collects Odd Crows

ON February 26, 1966, I conducted a crow roost shoot near Riner, Virginia. Fourteen members of the Virginia Tech Chapter of The Wildlife Society participated in the hunt. The primary objective of the shoot was to collect common crows for the population dynamics study which I have written you about.

One hundred fourteen crows were collected during several afternoon roost shoots this winter; the data is being assembled, and the resultant paper will be submitted to you shortly.

Several anomalous specimens collected during the February 26 hunt were the following (crows were collected by shotguns, over an owl to crow calls):



1. One adult male "crossbilled" common crow was killed. The upper mandible crossed over the lower mandible to the right at their tips (see enclosed photograph taken by Dr. Henry S. Mosby). An adult male common crow head with a normal bill structure, showing the slight hooking over of the upper mandible is pictured below the unusual "crossbilled" specimen. There were worn depressions in both the lower right and upper left cutting edges of the mandibles which allowed this irregular structure. I can't speculate as to why this occurred in a wild crow. Often, elongation of beaks and toenails occurs in tame crows that don't wear these structures down, from lack of use.
2. One immature male common crow was killed that possessed only one leg (right) intact. The left leg was truncated just below the joint which separates the metatarsus from the tibio-tarsus. The metatarsal break had healed into a smooth, rounded stump.

Both birds appeared otherwise healthy and of normal size, which indicates that neither anomaly hampered their survival or general state of well-being before collection.

I thought the above item might make an interesting sidelight for *Virginia Wildlife*.

Dwight R. Chamberlain
School of Forestry and Wildlife
V.P.L., Blacksburg

Enjoys Poem

HERE is a clipping I cut from a hunting and fishing magazine many, many years ago. This is a very good description of my 69 years of fishing experience, mostly in the Shenandoah and its tributaries. My first poles were cut in the woods, either hickory or cedar. The older I get the more I enjoy reading this poem. I hope you can see fit to use it in *Virginia Wildlife*.

R. F. Gilbert
Staunton

JEST FISHIN'

*I love to rise, fore break of dawn,
When dew lies heavy on my lawn
And strike out far across the hills
To answer the call of tinkling rills.
I love to go afishin'.*

*Across the fields of waving grain
Into a wood and down a lane
From afar comes the call of a wandering loon
As he bids farewell to the waning moon.
I love to go afishin'.*

*With pail of bait and an old cane rod
Since childhood days these paths I've trod
From barefoot boy with a dog at my side
Till now that I've reached life's eventide
I love to go afishin'.*

*Each stone in the path, each tree 'long the way
Bring fond memories to me of an earlier day.
I have no desire to turn time in its flight
The past it was lovely, the future is bright.
I love to go afishin'.*

*No need for smart tackle or fancy tools
No tempered rod, nor reel with jewels
I only need my old cane pole
To enjoy myself at the fishin' hole.
I love to go afishin'.*

*With worms on hook and pole in hand
I'm The King of all the land
I lie on the bank with hat o'er my eyes
While the breeze thru the pine above me sighs.
I love to go afishin'.*

*My prayer is a plain one and as God is just
I know when I'm gone and my body is dust
I will be allowed to return and then
I'll wander thru these old haunts again.
I love to go afishin'.*

Prize Winning Groundhogs



THE Greer Gun Company here in Roanoke sponsors a contest during the summer months, and I had the pleasure of winning first and third prizes.

This company gave as first prize an \$89.50 varied rifle scope; second prize, a \$20.00 hunting knife; and third prize, a \$10.00 telescope for the largest groundhog. My first prize was 17 pounds 7½ ounces, third prize 16 pounds.

I killed 49 groundhogs last summer. The farthest was 399 yards. I have been told some people kill them at 1000 yards. They may guess at the distance, or be like a partner that has hunted with me. His steps are only two feet apart.

I look forward to receiving your magazine as I like it very much and think it is one of the best.

Lester W. Huffman
Roanoke

America! America!

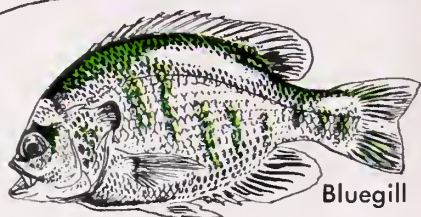
*We
Shed
Our
Trash
on
Thee!*



Symbolic of the whole struggle to prevent wanton destruction of natural resources and to preserve a pleasant and wholesome outdoor environment, a lone fisherman bucks the tide of thoughtlessness, irresponsibility and plain bad manners among his fellow men. Commission photographer Leon Kesteloo came upon Lewis S. Pendleton, Jr., of the Virginia Anglers Club as he emerged from the Rapidan with an armload of sorry evidence that others of a different breed of "sportsmen" had enjoyed the stream's offerings before him.

NATURAL BAITS

Crickets

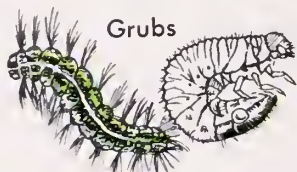


Bluegill

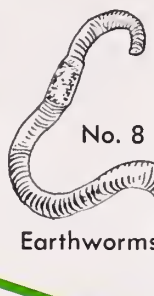


Minnows, 2-3 inches long. Hook lightly through lips.

Grubs



Caterpillars



No. 8 Hook

Earthworms



CRAPPIE

SMALLMOUTH
BASS



Large earthworms



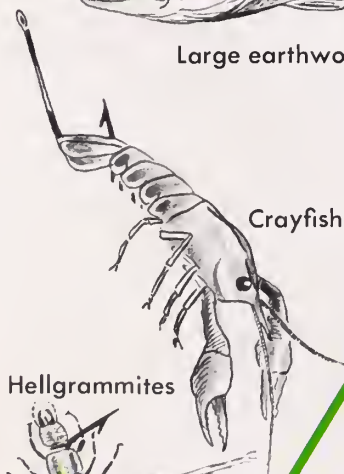
Minnows



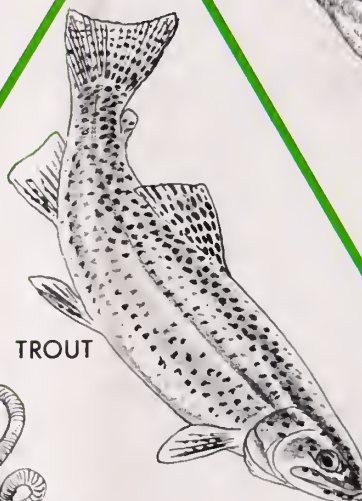
Frog



LARGEMOUTH
BASS



Crayfish

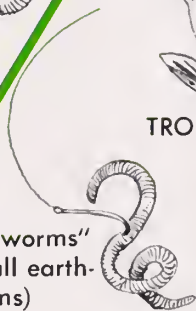


TROUT

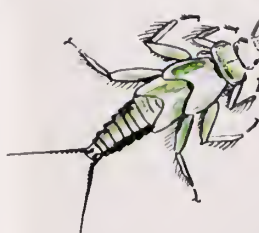
Hellgrammites



"Redworms"
(Small earthworms)



Newts,
Salamanders



Aquatic insects,
nymphs.
Use light wire hook,
no sinker.



Wasp larvae . . .
(Getting the bait
may be harder than
catching the fish!)



Grasshoppers

D. RAY